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4. Burg, F. D., et al. A Method for Defining Competency in Pediatrics. *J. Med. Educ.* **51**(1976):824–828.
5. LaDuca, A., Taylor, D. D., and Hill, I. K. The Design of a New Physician Licensure Examination. *Eval. Health Prof.* **7**(1984): 115–140.
6. Templeton, B. Multiple Choice Testing in Psychiatry. In *Evaluative Methods in Psychiatric Education*, H. L. Muslin, et al., eds., pp 27–50. Washington, D.C.: American Psychiatric Association, 1974.
7. Gonnella, J. S., Louis, D. Z., and McCord, J. J. The Staging Concept. An Approach to the Assessment of Outcome of Ambulatory Care. *Med. Care* **14**(1976):13–21.
8. Gonnella, J. S., Hornbrook, M. C., and Louis, D. Z. Staging of Disease: A Case-Mix Measurement. *J.A.M.A.* **251**(1984): 637–644.
9. Conklin, J., Lieberman, J., Barnes, C., and Louis, D. Disease Staging: Implications for Hospital Reimbursement and Management. *Health Care Financ. Rev.* November 1984:13–22.
10. Cox, K. R. Quality Control in the Part I F.R.A.C.S. Examination. *Aust. N. Z. J. Surg.* **46**(1976):269–278.
11. Futcher, P. H., Sanderson, E. V., and Tusler, P. A. Evaluation of Clinical Skills for a Specialty Board During Residency Training. *J. Med. Educ.* **52**(1977): 567–577.
12. Tudor, J. M. Performance Documentation: How to Confirm a Resident's Progress. *J. Med. Educ.* **53**(1978):337–343.
13. Friedland, J. A., Wu, L., and Wray, N. P. Spectrum of Diseases for House Staff Education on a VA General Medicine Inpatient Service. *J. Med. Educ.* **60**(1985):772–776.
14. LaDuca, A., Staples, W. I., Templeton, B., and Holzman, G. B. Item Modelling Procedure for Constructing Content-Equivalent Multiple Choice Questions. *Med. Educ.* **20**(1986):53–56.
15. Roid, G. H., and Haladyna, T. M. *A Technology for Test-Item Writing*. London: Academic Press, 1982.

Financing Graduate Medical Education in Family Medicine

JACK M. COLWILL, M.D.

Abstract—Family practice residency programs differ fiscally from residency programs in most other specialties because they have limited income-generating potential. The present review demonstrates that the typical family practice residency program has been fiscally solvent as a result of receiving approximately one-third of its income from state and federal appropriations. The level of such support plateaued in the 1980s and programs have not continued to expand despite an ongoing shortage of family physicians. Today, declining Medicare payments to hospitals threaten hospitals' contributions to family practice residency programs. The ability of family practice residency programs to meet the continuing need for family physicians will depend upon the development of specific state and federal policies that provide fiscal incentives to maintain and expand family practice residencies. *Acad. Med.* 64(1989):154–158.

Maintaining adequate funding for U.S. graduate medical education is a growing national concern, particularly for those in family practice. The development of family practice residencies in the 1970s depended upon the recognition by funding sources that these programs had limited revenue-generating potential. Professional fees from primary care services are limited when compared with those from more procedurally oriented services. Further, the ambulatory family practice center, compared with other hospital revenue producers, contributes only modestly to the gross revenues of the teaching hospital. Consequently, funding for family practice residency programs has been heavily dependent upon governmental support to augment the typical sources of funding in graduate medical education, such as the hospital and professional fees.

Several studies have examined the direct costs and sources of funding for family practice residency programs. The present paper represents a review of those data, demonstrates why family practice funding is different from that of inpatient-oriented specialties, and addresses issues of future funding of graduate education that are of particular relevance to family medicine.

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Features of Family Practice Residencies

With the establishment of the American Board of Family Practice in 1969, family practice became the twentieth medical specialty. Subsequently, state and federal support catalyzed the explosive development of family practice residency programs. The number of accredited programs peaked in 1980 at 385, then dropped to 381 by July 1988; the total number of residents reached 7,486 in 1984 and then dropped to 7,279 in 1988.[1] Today 12% of all first-year residency positions are offered in family practice.[2]

While training in most other specialties is based primarily on hospital inpatient wards, over half of each family practice resident's experience is in ambulatory medicine. Two-thirds of a family practice resident's experience in the ambulatory setting is acquired providing longitudinal care for patients in a family practice center. In addition, other medical disciplines contribute to the education of a family physician; typically, over half of a resident's time is spent on rotations with faculty members in other disciplines, in both ambulatory and inpatient settings.

The typical residency program is relatively small, adding six residents annually to a three-year program. Although residencies in most specialties are based in large teaching hospitals, most residencies in family medicine are located in community hospitals. In half of these community hospitals, family practice represents the only residency program. Even so, most programs are associated with medical schools. In 1988, 33% were operated directly by a medical school, and an additional 55% were affiliated with one; 15 programs were based with the armed forces.[1]

Thus, family practice residency programs differ from the inpatient-oriented specialties by their heavy emphasis on ambulatory care, their maintenance of primary-care continuity practices, their rotations in other disciplines, and their tendency to be located in community hospitals where few other residency programs are located.

Sources and Uses of Funds

Three national surveys have reviewed the costs and revenues of family practice residency programs. These surveys had remarkably consistent results despite the inherent methodological difficulties imposed by different accounting methods, classification errors, and other variables. These surveys were the University of Wyoming study of 1975,[3] the University of Minnesota study of 1981–82,[4] and the University of Oklahoma study of 1982–83.[5] Each surveyed all the residency programs in the United States and obtained usable responses from approximately 40% of them.

The most recent study, from the University of Oklahoma, obtained data from 158 programs. These programs were similar to all family practice residencies in terms of six demographic variables. The investigators used extensive pretesting of the questionnaire and provided assistance to respondents in an effort to reduce misclassification errors. Inasmuch as education and patient-care activities are intertwined, these data represent the combined costs of providing education and patient care.

The direct expenditures of these 158 family practice residencies were divided almost equally among resident stipend costs, family practice center costs, and faculty and administrative costs (as shown in Table 1). The median program cost per resident per year was $72,093, and the mean cost was $79,058. These figures represent only direct expenditures, such as salaries, fringe benefits, malpractice insurance, and mortgage payments. Indirect costs, principally those allocated by a hospital to the family practice center or program, were not included. Many family practice centers were freestanding centers — organizationally, fiscally, and administratively separate from the teaching hospital. The majority, however, were components of hospitals.

Table 2 lists sources of operating revenue for the 158 programs. The median and mean revenues per program were $70,223 and $80,559 per resident per year, respectively. Not all programs reported revenue from each source. Consequently, the calculation of the median and mean for a particular source of revenue was calculated based upon the number of programs reporting revenue from that source. Revenue from sources specifically identified with responsibilities other than residency training (for example, medical student education or research) was excluded.

Hospital support, the largest single source of revenue for the 158 programs as a group, provided a median of $27,965 per resident. Some programs did not report any hospital support. However, this apparent lack of hospital support is probably an artifact of the programs' accounting systems. For some programs, hospital support may have been identified as "non-program-managed revenues," which were defined as sources of funding that did not flow through the program's own accounting system.

Professional fees for services rendered by family practice residents and faculty provided the second-largest source of operating revenue; $22,911 was the median collected. Professional fees that residents assisted in generating while on rotations on other specialty services accrued to those specialties.

The third major source of support was state government. Two-thirds of the programs reported receiving a median of $15,925 of state funds per resident. State funding for family practice residency education was provided in several ways. Some states provided direct line appropriations for residencies to a university or to a manpower authority, such as an area health education center. Others included family practice funding under the overall

Table 1

Mean and Median Expenditures of 158 U.S. Family Medicine Residency Programs in 1982–83*

	Median	Mean
Resident costs	$24,234	$27,918
Faculty costs	19,334	22,955
Administrative costs (n = 118)†	3,876	6,704
Family practice center	23,996	27,219
Total program costs	72,093	79,058

*Modified from C. N. Ramsey et al., *A National Study of Financing of Family Practice Residency Training Programs* (Oklahoma City, Oklahoma: University of Oklahoma, 1985).

†Only 118 respondents provided information on administrative costs.

Table 2

Sources of and Total Operating Revenues for 158 Family Practice Residency Training Programs, 1982–83*

Source/Total Sources	Number of Programs Reporting	Revenue per Resident per Year	
		Median	Mean
Hospital support	105	$27,965	$34,397
Patient care revenue	142	22,911	27,467
State support	105	15,925	22,780
Non-program-managed support	49	16,526	18,767
Other institutional support†	25	7,163	20,761
Grant support	82	5,776	8,971
Other support	43	1,142	6,992
Philanthropic support	24	909	9,138
Interest and investment income	33	372	2,450
Local governmental support	11	10,856	12,328
Total revenue	158	70,223	80,559

*Modified from C. N. Ramsey et al., *A National Study of Family Practice Residency Training Programs* (Oklahoma City, Oklahoma: University of Oklahoma, 1985).

†Excludes hospital and government support.

umbrella of appropriations to a university or medical school. Data from the American Academy of Family Physicians (AAFP) show that 40 states had legislation dealing with family practice education.[6] Because of variations in means of funding, it is difficult to obtain accurate longitudinal data on state funding of residencies. The AAFP data, however, demonstrate that state funding plateaued in the 1980s and, indeed, has decreased in some states.

Federal training grants have been a relatively small but highly important source for funding family medicine residency education. Such grants initially catalyzed development and now provide operational support. These grants provided under Section 786 of Title VII reached $40.5 million in 1978 but declined to $37 million in 1987. Thus, considering inflation, these funds have decreased markedly. Despite this drop, over half of the programs in the Oklahoma study were receiving grant support—largely from the federal training grants. For these programs, the median revenue from grants was $5,776 per resident per year.

Thus, most income accruing to the family practice residency programs surveyed in the Oklahoma study came from three sources: hospital revenues, professional fees, and governmental funding. The three sources provided funds roughly comparable in magnitude.

Unique Funding Problems

One might ask why funding of graduate education in family medicine is so dependent upon governmental support and why it is so different in this regard from graduate education in other medical specialties. In most specialties residency education is funded from hospital income and professional fees.[7] Overall, hospitals provide 80% of these residents' stipends and also provide the in-hospital milieu—that is, hospital wards, operating rooms, and intensive care units. Faculty salaries are derived both from professional fees and from hospital revenues.

Differences between the financing of residency education in family practice and that in traditional specialties lie primarily in the relative abilities of those programs to generate patient-care revenue, both as professional fees and as hospital revenue through admissions. Costs of family practice residencies are probably lower than those of other specialties: faculty salaries tend to be lower, and the specialty is less dependent upon technology. The cost of operating a family practice center, one-third of program cost, is not large when compared with the costs of facilities required for other residencies such as operating rooms, radiology suites, and intensive care units. On the other hand, the income from the family practice center is limited when compared with that of the operating room and may not be essential to the operation of the hospital. Thus, the center, if funded by the hospital, tends to be a "loss leader" for the hospital, and its fiscal reason for existence lies in the degree to which it provides admissions for the hospital.

The Department of Family and Community Medicine at the University of Missouri–Columbia School of Medicine has maintained a record of the fiscal impact of patient referrals from the family practice center to the university's hospitals and clinics. Each patient visit to the family practice center in 1986 yielded an average of $27 in professional charges by family physicians, $29 in professional charges by faculty in other departments for patient consultation or referral, and $163 in charges by the hospital for inpatient care and ancillary services. These hospital charges represent a significant contribution to that hospital but nevertheless were only 3% of the hospital's gross charges. Offsetting those charges, the hospital incurred the marginal costs of providing hospital and ancillary services for those patients, plus the $400,000 overhead cost of the family practice center.

The 20,000 clinic visits of the Columbia practice center represent a practice equivalent to that of four active family physicians. Purely from a fiscal standpoint, the hospital might find that marketing, maintaining good relationships with referring physicians, or establishing nonteaching satellite clinics would be a more cost-effective way to obtain referrals than would be investment in a family practice residency. In the past, Medicare educational cost reimbursement has made the situation viable. However, major additional hospital support to expand family practice residencies or to replace declining governmental support is not a realistic expectation when one takes into

consideration tightening third-party reimbursement, competing demands for funding new technology, the expansion of other residency programs to meet hospital service needs, and the enhancement of other hospital services.

Recognizing the limited potential for increased support from the hospital, what is the potential of professional fees to support the residency? Revenue from professional services is a critically important source for meeting the cost of graduate medical education in all specialties. The family practice residencies participating in the Oklahoma study had median revenue from professional fees of $22,911 per resident per year, approximately one-third of the total program costs. Comparable data on professional fees by residencies in other specialties have not been published. However, in 1986–87 at the University of Missouri Hospital and Clinics (UMHC), revenue from professional fees by faculty was 2.8 times greater per resident for pediatrics, 3.2 times greater for internal medicine, and 5.7 times greater than that for family practice. The family practice department's professional fees per resident at the UMHC were not low by national standards and exceeded the mean for such fees in the Oklahoma study. The greater revenues per resident by the departments of pediatrics, medicine, and surgery occurred as a result of the inpatient and procedural orientations of these disciplines and their subspecialties. Although the data reported in that study were derived from only one institution, they probably are broadly representative and demonstrate the discrepancy in professional revenues between family practice residencies and inpatient-based residencies.

In a 1981 study, Colwill and Glenn[8] built a hypothetical model of family practice residency education in order to ascertain the degree to which program costs might be met through professional charges for patient care. This model used residency review-committee criteria to define the minimal ratio of faculty to residents and the maximum numbers of patient visits per resident. The paper assumed a clinic overhead rate of 50% of gross charges, fees based on community levels, a collection rate of 85% of gross charges, and 1,500 visits per resident per year — exceeding by 400 visits per year the 1,105 visits found in the Oklahoma study. Even with these unrealistically optimistic assumptions, only 50% of program costs could in theory be met by revenues from the care of the family practice patients. Thus, in the current climate of reimbursement, it is unlikely that professional patient care revenue will fund a significantly higher proportion of residency program costs than the third it now funds.

One might assume that the primary care portions of residencies in internal medicine and pediatrics would face similar fiscal problems resulting from this limited potential for generating professional fees. However, a recent study by Kosecoff and colleagues[9] of 15 residency-based group practices in general internal medicine at teaching hospitals suggests that these group practices were financially self-sufficient despite the fact that they had educational costs and served disadvantaged populations. On the surface, these findings appear to be at variance with those of other studies reported here. This may not be the case, however. Program costs in the Kosecoff study of internal medicine clinics addressed only residency training costs associated with time spent in the clinic and not the full administrative costs of the program. Supply costs and other operational support costs (such as telephone service), which in the University of Missouri practices equalled 25% of non-physician clinic overhead costs, were not included. Furthermore, professional charges in the internal medicine clinics were higher than prevailing fees in their communities. The community settings of most family practice centers make it unlikely that they could succeed if they charged fees above the prevailing community levels.

Policy Implications

The number of residency positions in family practice has plateaued at a time when manpower planners believe that a higher proportion of medical school graduates should be prepared for primary care careers.[10,11] The congressionally mandated Council on Graduate Medical Education reported a shortage of family physicians.[11] At the same time, the council perceived a probable overall surplus in the total number of physicians. Managed-care organizations increasingly are seeking physicians with specific preparation in primary care. The American Academy of Family Physicians has long urged further expansion in family practice residency education. Its goal has been to have 25% of U.S. medical school graduates enter family medicine. Family physicians are also more likely to meet the needs of rural communities. In 1986 they chose rural practices (that is, in areas other than standard metropolitan statistical areas) three times as often as physicians in other specialties, in aggregate.[12]

The major reasons for the plateau in the number of residency positions in family practice are the leveling of government support and the family practice programs' limited income-producing potential. The number of applicants has not thus far been a limiting factor, for well over 90% of residency positions have consistently been filled — even following the decline in those positions matched through the National Residency Matching Program in 1988.[1]

The specialty distribution of residents within teaching hospitals is determined more by the service needs of the institution than as a response to societal needs. Residents provide valuable services for the institutions while they obtain an education. From a fiscal standpoint it may make more sense for the hospital to employ a resident in anesthesiology than one in family practice. A resident in anesthesiology can provide service in the operating room — a major profit center — and save the hospital the cost of a nurse anesthetist. At the same time, the hospital obtains direct and indirect Medicare educational reimbursements for the services of the resident. In contrast, 50% of the family practice resident's time is in the "loss leader" ambulatory setting.

In the ambulatory setting Medicare direct educational reimbursement is less than on the inpatient wards because patients are younger and therefore a smaller proportion are Medicare recipients. Furthermore, Medicare direct educational cost reimbursement in the ambulatory setting is set at 80%, while on the inpatient wards it provides 100% reimbursement.

Congress now has made major reductions in Medicare payments for graduate medical education. Direct educational cost reimbursement will now be tied to an institution-specific cost per resident that will be retroactive to the 1984 federal fiscal year. This figure is to be updated annually by the consumer price index. Furthermore, the indirect educational cost reimbursement rate has been reduced by one-third, and further reductions are being considered. Estimated indirect payments for fiscal 1988 amount to two billion dollars, twice the level of direct payments.

The impacts of these reductions have yet to be felt. However, it is safe to assume that most teaching hospitals will reassess their commitments to graduate medical education. For many community hospitals, the promise of increased numbers of admissions from family practice residency graduates will justify maintenance of the residency program. For many other teaching hospitals it may be more important to support the major hospital revenue-generating centers through maintenance of residencies in other specialties. Thus, reductions in Medicare educational payments to the hospital are likely to be followed by disproportionate reductions of residency programs in family practice.

During the 1970s state legislatures and Congress recognized the societal need for family physicians to address both the shortage of primary physicians and the need for rural physicians. Programs are fulfilling these needs but are in financial jeopardy because their long-term funding needs have not been fully recognized. Maintenance and expansion of programs are highly dependent upon the understanding that the financing needs of family practice residencies are different from those of inpatient-oriented residency programs in other specialties. This has been recognized by the Institute of Medicine report of 1978,[13] the Graduate Education National Advisory Committee report of 1980,[14] and the report of the Council on Graduate Medical Education of 1988.[11]

Both Congress and state legislatures must review and reestablish policies for training of family physicians —especially in light of decreasing Medicare support of graduate medical education. A reasonable funding objective would be for the residency and its sponsoring hospital to generate two-thirds of the total cost of a family practice residency. The remaining third must come from state and federal sources that are increased to compensate for the inflationary trends of the 1980s and decreasing Medicare support. A counterbalance is needed to hospitals' tendencies to disproportionately reduce family practice residencies because of Medicare reductions. This could be accomplished by Congress' proportionately increasing Medicare educational payments for specialties in short supply in relation to specialties that are in surplus.

A significant increase in residency positions in family practice will require additional direct funding. This might be accomplished through expansion of the current training grant authority under Title VII, Section 786. However, because of their competing nature and lack of inflationary funding increases, these grants have not provided the program stability that would occur through more predictable funding. Federal capitation support or matching grants to states have the potential to provide incentives for both maintenance and expansion of residencies in family practice, but only if funded adequately. These options should be explored.

In the final analysis, so long as primary care services are reimbursed at current levels, maintaining and expanding family practice residencies will depend upon the degree to which government support is available to assist in meeting increased program costs.

References

1. American Academy of Family Physicians. *Results of the Annual Survey of Family Practice Residency Programs.* Reprint No. 150. Kansas City, MO: American Academy of Family Physicians, 1988.
2. Crowley, A. E., and Etzel, S. I. Graduate Medical Education. *J.A.M.A.* **260**(1988): 1093–1101.
3. Joehnk, M. D., Allen, R. E., and Spahr, R. W. *The Financial and Economic Implications of Family Practice Residency Programs: Nationwide Operating Experiences of Established Centers* (DHEW Contract No. 298-74-C-0008). Laramie, Wyoming: University of Wyoming, Health Planning Resources Center, 1979.
4. Ciriacy, E. W., Liang, F. Z., Godes, J. R., and Dunn, L. D. The Cost of Funding of Family Practice Graduate Education in the United States. *J. Fam. Pract.* **20** (1985):285–295.
5. Ramsey, C. N., Durrett, J. P., and Grant, W. D. *A National Study of Financing of Family Practice Residency Training Programs.* Oklahoma City, Oklahoma: University of Oklahoma, 1985.
6. American Academy of Family Physicians. *State Legislation and Funding for Family Practice Programs: Update Through 1986.* Kansas City, MO: American Academy of Family Physicians, 1986.
7. Association of American Medical Colleges. *Financing Graduate Medical Education.* Washington, D.C.: AAMC, 1986.
8. Colwill, J. M., and Glenn, J. K. Patient Care Income and the Financing of Residency Education in Family Medicine. *J. Fam. Pract.* **13**(1981):529–536.
9. Kosecoff, J. R., et al. Providing Primary General Medical Care in University Hospitals: Efficiency and Cost. *Ann. Intern. Med.* **107**(1987):399–405.
10. Schroeder, S. A. The Making of a Medical Generalist. *Health Aff.* **4**(Summer 1985): 22–46.
11. Council on Graduate Medical Education. *First Report of the Council.* Volume 1. DHHS Publication. Washington, D.C.: Government Printing Office, July 1, 1988.
12. American Medical Association. *Physician Characteristics and Distribution in the U.S.: 1986.* Chicago, Illinois: American Medical Association, 1986.
13. Institute of Medicine. *A Manpower Policy for Primary Health Care.* Washington, D.C.: National Academy of Sciences, 1978.
14. Department of Health and Human Services. Health Resources Administration. *Report of the Graduate Medical Education National Advisory Committee to the Secretary.* DHHS Publication No. (HRA) 81-651. Washington, D.C.: Government Printing Office, 1980.